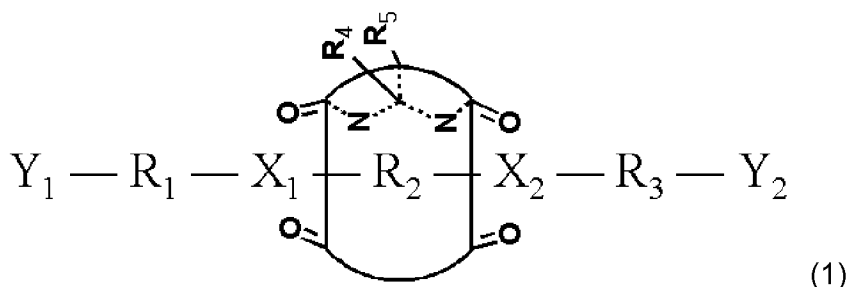


### Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

What is claimed is:

1. (Currently Amended) A solid substrate for a biochip comprising a compound represented by Formula 1 below ~~in which a compound of Formula 3 below vertically passes through a cavity of cucurbituril or its derivative of Formula 2 below:~~

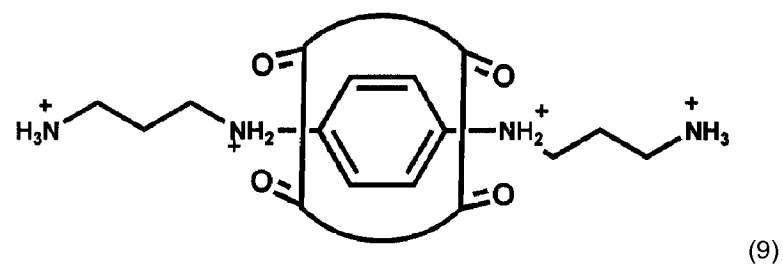
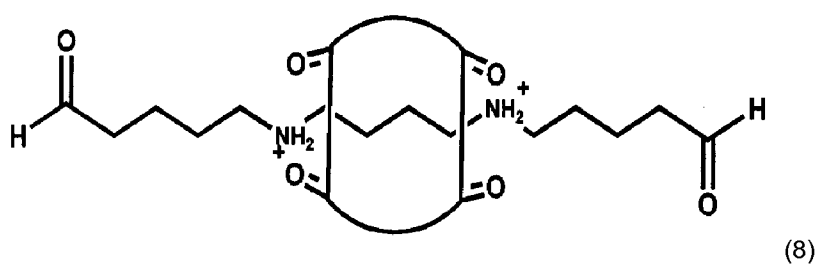
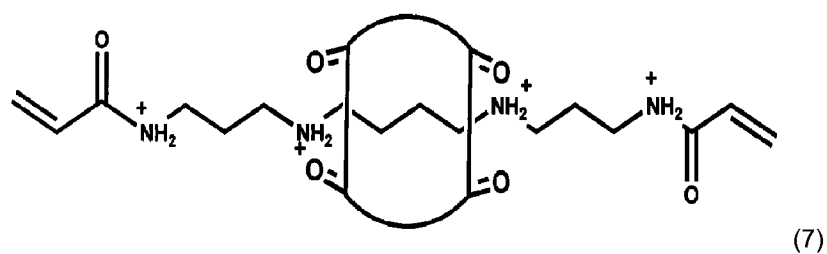
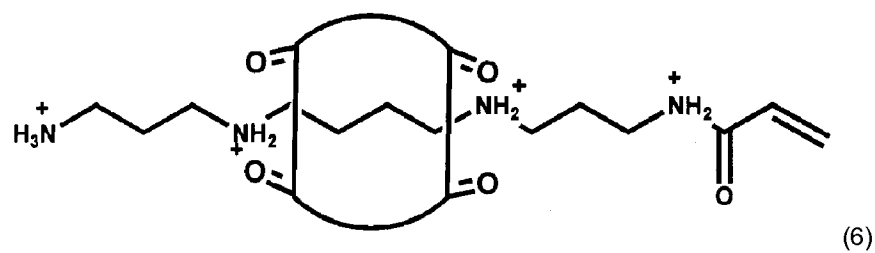
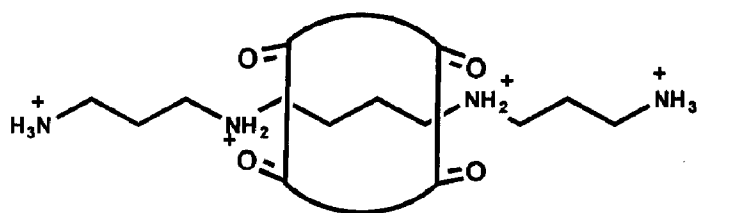


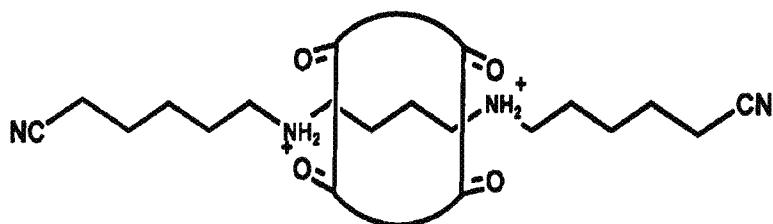
wherein R<sub>1</sub>, R<sub>2</sub>, and R<sub>3</sub> are each independently saturated or unsaturated linear C<sub>2</sub>-C<sub>10</sub> alkylene, ethyleneglycol oligomer, 1,4-substituted benzene, or 1,4-substituted pyridine; X<sub>1</sub> and X<sub>2</sub> are each independently a positively charged functional group for ion-dipole interaction with an oxygen atom of cucurbituril or its derivative of Formula 2; Y<sub>1</sub> is a functional group for a linkage with a biomaterial comprising a gene or a protein; and Y<sub>2</sub> is a functional group for a linkage with a solid substrate, wherein the compound of Formula 1 provides a linkage layer with a predetermined spacing in the biochip by being bonded to the solid substrate.

2. (Currently Amended) The ~~compound~~ solid substrate of claim 1, wherein X<sub>1</sub> and X<sub>2</sub> are each independently secondary ammonium, 1,4-substituted pyridinium, or benzyl ammonium; and Y<sub>1</sub> and Y<sub>2</sub> are each independently a primary amine group, an amide group, an acrylamine group, an alkylester group, an aldehyde group, a carboxyl group, an alkoxy silane group, a halogenated acyl group, a hydroxyl group, a thiol group, a halogen group, a cyan group, an isocyan group, or an isothiocyan group.

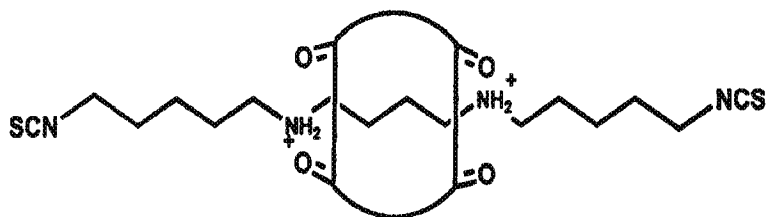
3. (Currently Amended) The ~~compound~~ solid substrate of claim 1, which

is selected from the group consisting of compounds represented by Formulae 5 through 13:

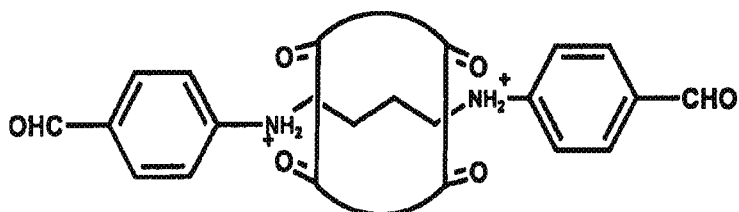




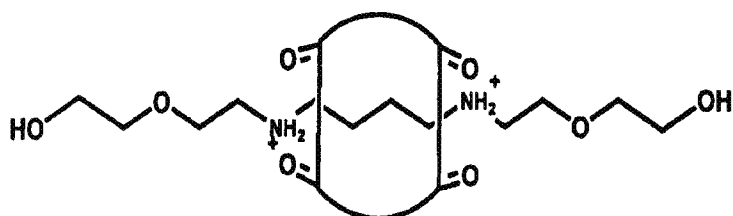
(10)



(11)



(12)



(13)

4. (Cancelled)

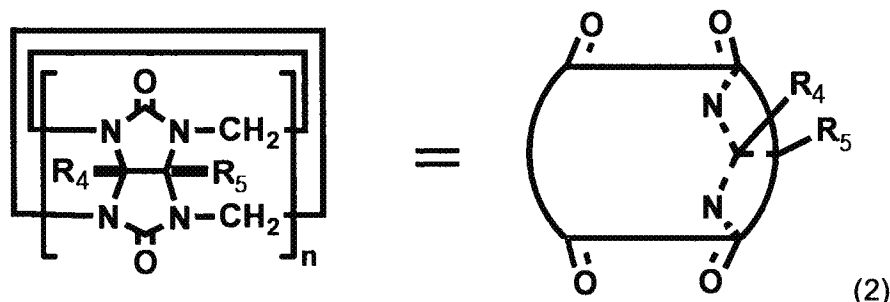
5. (Currently Amended) The solid substrate of claim [4] 1, wherein the compound of Formula 1 is present in a density of 0.05 to 0.6 compounds/nm<sup>2</sup>.

6. (Currently Amended) The solid substrate of claim [4] 1, which is a glass, a silicon wafer, an indium tin oxide (ITO) glass, an aluminum oxide substrate, or a titanium dioxide substrate.

7. (Previously Presented) A gene chip comprising the solid substrate of claim 1.
8. (Previously Presented) A protein chip comprising the solid substrate of claim 1.
9. (Previously Presented) A sensor for biomaterial assay comprising the solid substrate of claim 1.
10. (New) The solid substrate of claim 1, wherein the biochip is selected from the group consisting of a gene chip, a protein chip and a sensor for biomaterial assay.
11. (New) The solid substrate of claim 1, wherein the compound of Formula 1 is bonded to the solid substrate via a covalent bond or a non-covalent bond.
12. (New) The solid substrate of claim 1, wherein a compound of Formula

3

$$Y_1 - R_1 - X_1 - R_2 - X_2 - R_3 - Y_2 \quad (3)$$
 (wherein  $R_1$ ,  $R_2$ ,  $R_3$ ,  $X_1$ ,  $X_2$ ,  $Y_1$ , and  $Y_2$  are as defined in Formula 1 above)  
 vertically passes through a cavity of cucurbituril or its derivative of Formula 2



wherein  $n$  is an integer of 4 to 20; and  $R_4$  and  $R_5$  are each independently hydrogen, an alkenyloxy group with an unsaturated bond end and a substituted or unsubstituted alkyl moiety of  $C_1$ - $C_{20}$ , a carboxyalkylsulfinyloxy group with a substituted or unsubstituted alkyl moiety of  $C_1$ - $C_{20}$ , a carboxyalkyloxy group with a

substituted or unsubstituted alkyl moiety of C<sub>2</sub>-C<sub>8</sub>, an aminoalkyloxy group with a substituted or unsubstituted alkyl moiety of C<sub>2</sub>-C<sub>8</sub>, or a hydroxyalkyloxy group with a substituted or unsubstituted alkyl moiety of C<sub>2</sub>-C<sub>8</sub>.